Segment 9 – Selecting Content

Deb Hansen describes the Iowa Content Network. Bev Showers explains the characteristics and implications of scientifically based research upon selecting content.

Bev Showers:
As I travel around the country, I hear a bit of buzz about something else that Iowa's been doing. It's something called "content networks." Would you say something about that?

Deb Hansen:
We have been concerned about school districts having access to scientifically based research. The federal requirements and state requirements expect districts to implement staff development based on content that has a strong research base. So we developed a set of resources for schools in a form of a website that lists research, and the quality of the research, and information about the reading, mathematics, and science studies.

Bev Showers:
What we did with the content networks was make some decisions that you need to be aware of. This will be shared on the website from the department when it all goes up anyway, but you need to know right now that if you took a really strict interpretation of No Child Left Behind, there is only one kind of research-based content. We made a decision after consulting five different typologies that have been published on ways of classifying research, according to the strength of research. After studying all of those, we decided to take a slightly broader view. Thus, this pyramid: On the left of the pyramid side you have '5,' which says 'Gold Standard.' [Note: the right side is labeled on this version of image.] The Gold Standard is at the top of the pyramid, because it's the smallest area on the pyramid. And, in fact, that corresponds to the amount of research available, the amount of written material available, proportionately.

Pyramid graphic
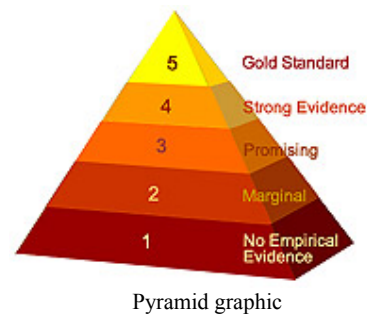
So, number 5 is the 'No Child Left Behind' criterion for scientifically-based research. What we then did was build categories under that. Five is the Gold Standard: that means the most strenuous design. Number 4, we said, has Strong Evidence. So it's a research-based program or strategy that has strong evidence but is lacking a couple of the design elements that are present in the Gold Standard.

Now let me explain what a couple of those design elements are. A resource or reference work called Campbell and Stanley lays out all the kinds of research designs used. They talk about various research designs in terms of the threats to internal and external validity, meaning this study just reported a finding. How confident am I that that's a real, true finding? Or is this just a "Fig Newton" of somebody's imagination here? Is it real?

The most real, according the scientific community, is when you have **random assignment of subjects**, which means of teachers and students, to treatment conditions. So say we had reading program A and reading program B. If we want to say, which one of these works better for teaching students certain things in reading, we would take a body of students and teachers, and we would randomly assign students and teachers to condition A, reading program A, and reading program B and we would compare their effects on students learning in the end. That would control for the most variables that could give you a false reading, and that's considered the Gold Standard.

Now all of you who live in schools and districts for the greater part of your working day may have noticed that it would not be a very popular activity with teachers, students, or their parents to randomly assign them to treatments. So the next most powerful thing would be to have a **matched control**, which means we'll take intact classrooms. There's a teacher who has already been assigned to these students, we're going to lead these students with this teacher in this school, just the way it's set up. But we're going to find just as close as possible another teacher in another school, with another set of students, who match up on a lot of the same characteristics: like gender, ethnicity, socioeconomic status, initial learning status. And what you lose in a matched design—matched control design—[are] some of the controls you get with the random design, but you don't totally disrupt the environment. The downside of that is you can't begin to match on every single variable that might have made a difference—which is sort of the point you were making this morning. When you go to human subjects— I am not saying that plants of corn are not complex, but they're not as complex as human subjects. So it is not like assigning a corn plant to condition A or condition B where everything is the same, except for the fertilizer, or the water, or the sun light, or whatever you decide to vary. We're dealing with just hundreds of variables. And in a match design, you can't control for all of them, so that's probably going to put you at level Four.

Then we have what is called **promising research**. Now we move to much weaker designs. I'll use the work I've done in Second Chance as an example of a weak design, where we have a pre-test, post-test, one-group design, where every student is serving as their own control, and there is no control group. So even though those students grew a lot, what's to say that another equivalent group wouldn't have grown just as much. So even if you've replicated it eight or ten times, you can say, Yeah, they've consistently learned in this, but we have no reason to believe that they wouldn't have done just as well or better in a competing condition, because we don't have a control group.

I think that the definitions are useful, simply for one and two, because those of you at district level offices get bombarded by sales people from all kinds of people marketing materials. And they walk up to you and say, Your district should buy this; this will cure world hunger; and, furthermore, it meets all the criteria for No Child Left Behind. Except there is no evidence; there are only testimonials. I used it and, in my heart, I know its great. We know that everyone is going to need something better than that.

I would say that these things in level one and two are question marks. If they were researched in a way that we could have confidence in the findings, they might, in fact, cure world hunger, but right now they're a question mark. We don't know, because that work hasn't been done. There is simply no work. Whereas, in level Three you've probably got a lot of research done, but it's not with the best designs. Good designs cost money. And at levels Four and Five, this pyramid keeps getting smaller and smaller the higher we go, we found things up here in reading, math, and science already. But there is not a bulk of stuff. Once you look at your own school and your own district, and you say, Okay this is what our students need; this is what they really need; and you go right there, you may not find anything that matches up—that had a score of five on it. Because the level of research done on it just didn't rise to that level. But you might find things in three and four.